THURSDAY, FEBRUARY 8, 1883

ZOOLOGICAL SKETCHES

Zoological Sketches. A Contribution to the Out-door Study of Natural History. By Felix L. Oswald. With Thirty-six Illustrations by Hermann Faber. (London: W. H. Allen and Co., 1883.)

Zoological Notes on the Structure, Affinities, Habits, and Mental Faculties of Wild and Domestic Animals; with Anecdotes concerning and Adventures among them; and some Account of their Fossil Representatives. By Arthur Nicols, F.G.S., F.R.G.S. Illustrated by J. W. Wood and F. Babbage. (London: L. Upcott Gill, 1883.)

WE cannot say much in favour of the first of these two works. The engravings are good, but the subjects chosen scarcely justify the care which has been taken in their execution. For these subjects are nearly all chosen for the sake of a comical or sensational effect, without any reference to utility as illustrating zoological facts or principles. And the essentially unscientific spirit which has led to the choice of the "thirty-six illustrations," is no less apparent throughout the letter-press. We are always ready to welcome any attempt at popularising zoology, more especially when the writer has any first-hand "contributions to the study of natural history" to supply; but surely such study admits of being made sufficiently interesting in itself, without the need of lame attempts at a kind of pleasantry, which in being always forced and never witty, must necessarily become irksome even to the least intelligent of unintelligent readers. We are the more disposed to regret the author's mistake in adopting this artificial style, because in his short preface, where it is not adopted, he shows that he is able to write with marked ability.

Concerning the facts of natural history which are detailed, the most interesting, in our opinion, are those which refer to the intelligence of monkeys and the stupidity of sloth bears. We shall, therefore, give one quotation on each of these topics.

Speaking of a domesticated sloth, the author says:—

"Though fed daily by the same hands, the old pensioner still fails to identify his benefactor, or to recognise his obligations in any way. To his ear the human voice in its most endearing tones is a grunt *et prœterea nihil;* you might as well appeal to the affections of a cockroach. You may frighten a pig, a goose, a frog, and even a fly, but you cannot frighten or surprise a sloth. On my last trip to Vera Cruz I procured a pair of black tardos, full grown, and in a normal state of health, so far as I could judge, but after a series of careful experiments I have to conclude that their instinct of self-preservation cannot be acted upon through the medium of their optic or acoustic nerves. They can distinguish their favourite food at a distance of ten or twelve yards, and the female is not deaf, for she answers the call of her mate from an adjoining room; but the approach of a ferocious-looking dog leaves her as calm as the sudden descent of a meat-axe within an inch of her nose. The he-sloth witnessed the accidental conflagration of his straw couch with the coolness of a veteran fireman. War-whoops do not affect his composure. I tried him with French-horn blasts and detonating powder, but he would not budge. One of my visitors exploded some pyrotechnic mixtures of wondrous colours and odours, but the tardo declined to marvel; he is a *nil-admirari* philosopher of the ultra-Horatian school."

Very different was the philosophical temper displayed by another of the author's pets. This was a young Siamese bonnet-macque monkey (*Macacus radiatus*), of which he says:—

"His conduct under circumstances to which no possible ancestral experiences could have furnished any precedent has often convinced me that his intelligence differs from the instinct of the most sagacious dog as essentially as from the routine knack of a cell-building insect. His predilection for a frugal diet equals that of his Buddhistic countrymen, and I have seen him overhaul a large medicine-chest in search of a little vial with tamarind jelly. He remembered the shape of the bottle, for he rejected all the larger and square ones, and after piling the round ones on the floor, began to hold them up against the light, and sub-divide them according to the fluid or pulverous condition of their contents. Having thus reduced the number of the doubtful receptacles to something like a dozen and a half, he proceeded to scrutinise these more closely, and finally selected four, which he managed to uncork by means of his teeth. Number three proved to be the bonanza bottle, and, waiving all precautions in the joy of his discovery, Prince Gautama left the medical miscellanies to their fate, and bolted into the next room to enjoy the fruits of his enterprise."

We have only observed one actual error in natural history, but as it is frequently repeated, we may point it out. The writer speaks of vampire bats as those which suck the blood of sleeping persons, whereas the truth is, as Belt has remarked, "the vampire is the most harmless of all bats."

The over-burdened title of the second of the above-named books serves to show its general character. The author is known from his previous works on "Chapters from the Physical History of the Earth," "The Puzzle of Life, and How it has been Put Together," &c. He is therefore already known as an ardent sportsman, a good naturalist, and an accurate observer; but in our opinion his latest work is his best. Indeed, we have seldom read a more successful and entertaining account of wanderings in which science has been combined with sport. Whether Mr. Nicols is writing about the snakes of India, the marsupials and monotremata of Australia, or the birds of South America, he manages equally to convey such vivid and interesting pictures of the animals, with their habits and surroundings, that while not a few of his first-hand observations are of importance to the scientific zoologist, nearly every page of his book is delightful and instructive to the general reader.

The plan of his work is a simple one. The first four chapters are devoted to Snakes, the second four to Marsupials, and the remaining eleven to Birds. In each case all the more interesting features of classification, anatomy, development, habits, distribution, intelligence, &c., are given with accuracy, and sandwiched between very readable descriptions of scenery, sporting adventure, &c. As an example of the latter, we may give one quotation, and for this purpose we choose one of the scenes in Australia:—

"On every side was desolation and salt-saturated earth, but here, in the midst of it, stately trees, luxuriant vegetation, and, above all, fresh water! This delightful site was selected by myself and my friend as a camping ground for a fortnight's holiday in the height of summer. Beyond a few pounds of biscuit and the usual allowance of tea and sugar, we had nothing, intending to live on whatever the gun and fishing-line brought to bag, and pick up as much natural history as possible. At a short distance from camp a creek entered the bay, noted for the abundance of wild fowl to be found upon it in the autumn and winter; but now all the birds were away breeding in the vast impenetrable swamps to the southward of the bay, except a few barren or unmated stragglers. . . . The sole result of the day's sport had been a pelican and a small shark, obtained in the first hour after sunrise, when alone it was possible to face the heat. Neither of us being acquainted with the method (if any exist) of rendering pelican a culinary delicacy, and having made the acquaintance of fried shark to such purpose that we would not willingly renew it, nothing remained but to watch for a chance duck. This duty being allotted to me, while my companion prepared the tea, I placed myself towards evening in hiding behind a mangrove stump, with the retriever beside me. For nearly an hour I endured the torture of a mosquito assault on face, hands, and legs, when suddenly a duck turned the seaward bend of the creek, and came skimming along the water to me. I stepped forward and shouted at him, with the usual result of making him hesitate in his flight and rise well into the air, exposing the lower and most vulnerable side of his body to the charge, which in another instant laid him dead upon the water. The retriever dashed in to do his part of the work, and our supper might have been considered secure, had not a swift-winged cloud passed between the very nose of the dog and the bird, and with a splendid swoop a sea eagle bore off the duck, grasped by one strong foot. The sudden and unexpected action deprived me momentarily of all thought but admiration for the consummate ease and grace of a movement performed without any apparent effort, yet so expressive of immense power."

Among the novel or otherwise interesting observations in natural history which are recorded, we may note the following. The young kangaroo, while carried in the pouch of its mother, swallows the nipple, the end of which rests in the stomach; if forcibly withdrawn, the young animal makes no attempt to regain it, nor does it seem to have any idea where to seek for it. Again, speaking of Prof. Owen's theory concerning the object of the pouch as a "perambulator," necessitated by the long droughts in Australia to enable the mother to carry about her young in her search for water, Mr. Nicols observes that this view can only at best apply to the case of kangaroos, and therefore can scarcely be taken as the true *raison d'être* of the marsupium. Moreover, as a matter of fact, the "arboreal marsupials *do not* migrate in the severest drought, and in all probability they depend entirely upon the copious dew which falls at night upon leaves and grass."

The following observation on the king lory seems worth quoting:—

"In a few minutes he flew on to a tree well within range of the binocular, and shortly afterwards a female joined him in answer to his call. The swain was ardent, the damsel coy; they flitted from branch to branch, and whenever she perched he circled round her, threw himself underneath the branch, and swung to and fro with outspread wings, displaying the full glory of his scarlet breast. In every movement, whether on the wing or swaying at the end of a bough, he studied to present in the most effective manner the brilliant adornments of his plumage. . . . I do not think it possible for any one who had seen this little episode in bird life to have resisted the conclusion that the male was conscious of his beautiful breast, and that he adopted the best method of showing it by swinging himself beneath the branch, whence the female could look down and admire the display."

In the course of a discussion on the theory of flight Mr. Nicols has occasion to correct several errors of observation which have been made by previous writers. Thus, Captain F. W. Hutton has said that he has "sometimes watched narrowly one of these birds (albatross) sailing and wheeling about in all directions for more than an hour without seeing the slightest movement of the wings"; and the Duke of Argyll, in his "Reign of Law," repeats the statement, on the testimony, as he says in reply to a letter from Mr. Nicols on the subject, "of many writers and of some friends." But Mr. Nicols is very positive in his assertion that "the soaring does not continue for more than four minutes without a wholly new departure of from twenty to thirty powerful wing impulses, and it would seem an importation of the supernatural into Natural History to admit the possibility of sustaining the [soaring] flight for an hour." Mr. Nicols also questions the accuracy of another statement which was published by the Duke in this Journal concerning the habits of *Picus minor*. His Grace said that, having had an opportunity of closely observing these habits, he found that the cock bird drums upon the hollow parts of trees with his beak, in order to produce "instrumental music" wherewith to charm the sitting hen. On this it is remarked—

"The above is dated May, 1880. Although everything from the pen of so attentive an observer will be received with respect, it must obviously be very difficult to determine whether this is really a substitute for vocal music, or simply the ordinary beating of the tree to procure food."

We shall now conclude this brief selection from Mr. Nicols' observations, by quoting a somewhat remarkable one which he made in the Zoological Gardens of London.

"I saw a most extraordinary performance on the part of a flamingo towards a *cariama*. The two birds were in adjoining pens in the open air, separated by close wire fencing, over which the flamingo could easily reach. The cariama was constantly uttering its harsh metallic cry while standing opposite to the flamingo, both birds being as near the fence as they could stand. They remained gazing at each other thus for at least half an hour, each replying to the cry of the other. The demeanour was not in the least suggestive of anger, but what passion moved the flamingo I cannot imagine, unless it had some reference to the sexual instinct, and may indicate a habit unknown to naturalists. During the whole time that I watched them—and perhaps for long before and after—the flamingo continued to drop from its beak upon or in front of the cariama a bright scarlet fluid, which I cannot doubt was blood. The bird was certainly not wounded or hurt, and the action, from whatever impulse it proceeded, was voluntary, and appeared to afford gratification to the performer and to the recipient of this singular attention. In reply to a note on the subject, which I at once sent to Mr. Darwin, he expressed his surprise at the peculiar behaviour of the flamingo, which had not previously been brought under his notice, but did not see his way to an explanation of it. The keeper told me he had witnessed the performance once before, and assured me that both birds were in perfect health, and on most friendly terms with each other."

From the care with which Mr. Nicols has made most of his other observations, we should have expected him in this case to have procured some of this scarlet fluid for examination, and also to have obtained permission to place both birds in the same pen; but we have said enough to show that his book seldom lays itself open to criticism of this kind, and we sincerely hope that it will, in the words of its concluding sentence, "find favour with the public," not only because it well deserves to do so, but also because the author promises that if it does, other Series of similar Zoological Notes will be issued by him from time to time. Lastly, we must not take leave of this, the First Series, without noticing the life-like drawings of the illustrations —particularly that of the cobra—and also the novel and effective character of the binding, the boards being covered with thin but continuous plates or shavings of wood, which, without at all adding to their stiffness, give so strikingly pretty a finish that we should like to see this new idea in book-binding largely adopted by other publishers. GEORGE J. ROMANES

THE GOLD COAST

To the Gold Coast for Gold. By Richard F. Burton and Verney Lovett Cameron. Two Vols. Maps and Illustrations. (London: Chatto and Windus, 1883.)

THE exploration undertaken by Captains Burton and Cameron was for the purpose of examining and reporting upon the condition and prospects of certain gold-mining properties in Western Africa, for which early in 1882 upwards of seventy distinct concessions had already been obtained from various native owners. Five only out of these concessions are reported on as having upon them mines actually in operation, while it is more than probable that of the remaining sixty-five a large proportion might be acquired by the British public for a valuable consideration.

It had originally been intended to explore the so-called Kong Mountains, relative to which no additional information has for many years been acquired; but so much work had to be accomplished on the Ancobra river that the latter portion of the programme had of necessity to be relinquished; under this disappointment Capt. Burton philosophically consoles himself with the reflection that "Geography is good but Gold is better.'

Capt. Burton left Trieste on November 18, 1881, for Gibraltar, and thence proceeded to Madeira, about which he very pleasantly gossips through some sixty pages, and where he is joined, on January 8, 1882, by his travelling companion, Capt. Cameron. From Madeira they proceed together to Teneriffe, *à propos* of which place we are given the translation of a Spanish account of the repulse of Lord Nelson from Santa Cruz de Teneriffe, which extends through at least another fifty pages.

From Teneriffe the travellers continued their voyage, touching at Bathurst, Sierra Leone, Cape Palmas, &c., eventually landing at Axim on January 24, 1882. Of Axim Capt. Burton says:—

> "There is no better landing-place than Axim upon this part of the African coast. The surf renders it impracticable only on the few days of the worst weather. We hugged the north of the Bobowusúa rock-islet. When the water here breaks there is a clear way further north; the southern passage, paved with rocks and shoals, can be used only when the seas are at their smoothest. A regular and well-defined channel placed us on the shingly and sandy beach. We had a succulent breakfast with Messrs. Gillet and Selby (Linott and Spink), to whose unceasing kindness and hospitality we afterwards ran heavily in debt. There we bade adieu to our genial captain and our jovial fellow-travellers."

From Axim the travellers visited a stretch of country in the vicinity of the coast, extending some distance west of that town, and Prince's River to the east of it; and then ascended the Ancobra as far as Tumentu, situated about twenty-two miles from its mouth. After inspecting this last locality Capt. Burton returned to Madeira, leaving Capt. Cameron to continue his surveys inland as far as Crockerville, a mining settlement about forty-five miles north-east of Axim. Capt. Cameron left the African coast on March 28, 1882, and having picked up Capt. Burton at Madeira they proceeded together to Liverpool.

Rich alluvial deposits as well as auriferous quartz reefs are described as occurring abundantly, but the hydraulicing of the former is strongly recommended in preference to the mining and crushing of the latter. This opinion is so constantly reiterated that the explorers would appear to believe that a large portion of the "Dark Continent" would pay for washing. Water is stated to be plentiful, and facilities for hydraulic mining are represented as being very general.

> "Wherever *catas* or 'women's washings' are found we can profitably apply the hydraulic system of sluicing and fluming, not by an upper reservoir only, but also from below, by a force pump. Water is procurable at all seasons by means of Norton's Abyssinian tubes, and the brook-beds dammed above and below will form perennial tanks."

In California as much as fifteen hundred and seventy cubic feet, or forty-three tons of water, under a pressure of four hundred feet, are sometimes discharged per minute from a single nozzle; it is therefore evident that any supply to be obtained from Abyssinian tubes, and pumped against an auriferous bank, would, in comparison with such a power as that described, possess only the force of an ordinary garden squirt.

About five-sixths of the letterpress are from the facile pen of Capt. Burton, the remainder being contributed by his companion, who appears to have done good work by determining the position of various places, of which the exact situation was previously unknown. Collections of plants and birds were also made.

Although somewhat diffuse, these volumes contain much information very pleasantly conveyed, but even in the case of gold-mining, caution is often to be recommended.

OUR BOOK SHELF

A Handbook of Vertebrate Dissection. By H. Newell Martin, D.Sc., M.D., M.A., and William A. Moule, M.D. Part I. How to Dissect a Chelonian. (New York: Macmillan and Co., 1881.)

SINCE the publication of Huxley and Martin's "Elementary Biology," there has been a growing want of more books constructed on the same model. Without such books it is exceedingly difficult for a student to dissect and thoroughly understand the anatomy of an animal which he has never examined before; and though many of the large teaching centres have their own laboratory directions, which, with the help of demonstrators, fulfil all requirements, there are few reliable practical books which can be bought by the private student.